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Abstracts

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Books for abstracting and eventual review should be sent to this department. Materials should be sent to Duncan J. Melville, Department of Mathematics, Computer Science and Statistics, St. Lawrence University, Canton, NY 13617, USA. (e-mail: dmelville@stlawu.edu).

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In order to facilitate reference and indexing, entries are given abstract numbers which appear at the end following the symbol #. A triple numbering system is used: the first number indicates the volume, the second the issue number, and the third the sequential number within that issue. For example, the abstracts for Volume 30, Number 1, are numbered: 30.1.1, 30.1.2, 30.1.3, etc.

For reviews and abstracts published in Volumes 1 through 13 there is an *author index* in Volume 13, Number 4, and a *subject index* in Volume 14, Number 1. An online index of all abstracts that have appeared in Historia Mathematica since 1974 is now available at http://historiamathematicaabstracts.questu.ca/.

The initials in parentheses at the end of an entry indicate the abstractor. In this issue there are abstracts by Francine Abeles (Union, NJ), Amy Ackerberg-Hastings, Patti Wilger Hunter (Santa Barbara, CA), Jeffrey K. Lawson (Cullowhee, NC), Menolly Lysne (Toronto, ON), James V. Rauff (Decatur, IL), Gary Stoudt (Indiana, PA), Laura Martini, Kim Plofker, and Duncan J. Melville.

General

Alexander, Amir. *Duel at Dawn. Heroes, Martyrs, and the Rise of Modern Mathematics*, Cambridge, MA: Harvard University Press, 2010, 307 pp. The book covers the period from the late 17th century to the 19th century. The author shows how the style of doing mathematics as well as the picture of a mathematician have been changing from a childlike

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scientist uniquely suited to reveal the hidden harmony of the world to a romantic hero like poets, artists and musicians. See the review by Roman Murawski in *Zentralblatt MATH* 1187.01019. (GSS) #38.1.1

Arnauld, Antoine. *See* #38.1.12.

Beery, Janet. Sums of powers of positive integers. *Loci: Convergence* **6** (2009), 21 pp., electronic only. The author describes the history of formulas for sums of integer powers from Pythagoras to Jakob Bernoulli by way of Archimedes, Aryabhata, Abu Bakr al-Karaji, Abu Ali al-Hasan ibn al-Hasan ibn al-Haytham, Thomas Harriot, Johann Faulhaber, Pierre de Fermat, and Blaise Pascal. Along with the changing forms of representation of formulas, the author also explores changing notions of "generality." (DJM) #38.1.2

Bellos, David. Mathematics, poetry, fiction: The adventure of the Oulipo. *British Society for the History of Mathematics Bulletin* **25** (2) (2010), 104–118. Describes some work of the late 20th-century French literary school that seeks to "think hard about the possible effects of conjoining mathematics and literature." (PWH) #38.1.3

Berinde, Vasile; and Păcurar, Mădălina. The measure of a great idea: 50 years on from the creation of the International Mathematical Olympiad. *European Mathematical Society Newsletter* **74** (2009), 15–18. This article gives a brief report of the origin and first 2 years in the life of the International Mathematical Olympiad on the occasion of its 50th anniversary. (LM) #38.1.4

Descotes, Dominique. *See* #38.1.12.

Durán, Antonio J.; Ifrah, Georges; and Manguel, Alberto. *The Life of Numbers*. Illustrated by Sean Mackaoui, Natalia Pintado, and Javier Pagola. Madrid: T Ediciones, 2006, 192 pp. Catalogue for an exhibition organized for the International Congress of Mathematicians in Madrid in August 2006. The book contains four articles: "Done on paper: the dual nature of numbers and the page," by Alberto Manguel; "Numbers are for counting," by Antonio J. Durán (in two parts); and "The way people learnt how to count and calculate," by Georges Ifrah. The catalogue is richly illustrated with photographs of artifacts and books as well as original artwork. See the review by U. D'Ambrosio in *Mathematical Reviews* 2516556 (**2010j**:01002). (AAH) #38.1.5

Gaull, Marilyn. From *Tristram Shandy* to Bertrand Russell: Fiction and mathematics. *British Society for the History of Mathematics Bulletin* **25** (2) (2010), 81–91. After what the author calls a "long opening digression into the history and culture of mathematics," she examines the mathematical images and problems in the 18th-century novel by Laurence Sterne. (PWH) #38.1.6

Grattan-Guinness, Ivor. *Routes of Learning. Highways, Pathways, and Byways in the History of Mathematics*, Baltimore: Johns Hopkins University Press, 2009, xiv + 372 pp. Collection of papers "by one of the greats of mathematical history writing" that explore the issue of history versus heritage, topics in mathematics and the history of mathematics that are challenging and often taught unsatisfactorily, and the employment of mathematics in numerology, Freemasonry, Christianity, and music. See the review by Donald Cook in *Mathematical Reviews* 2555774 (**2010h**:01012). (AAH) #38.1.7

Ifrah, Georges. *See* #38.1.5.

Joost-Gaugier, Christiane L. *Pythagoras and Renaissance Europe. Finding Heaven*, Cambridge: Cambridge University Press, 2009, 319 pp. This book shows how Pythagoreanism captured the interest of the European Renaissance. It does not deal with the mathematical achievements the Pythagoreans, but rather achievements in the visual arts. The author examines Pythagorean ideas in the works of Cusanus, Ficino, Leonardo da Pisa, Masaccio, Alberti, Raphael, Bramante, etc. See the review by Eberhard Knobloch in *Zentralblatt MATH* 1187.01016. (GSS) #38.1.8

Mackaoui, Sean. *See* #38.1.5.

Manguel, Alberto. *See* #38.1.5.

Mann, Tony. From Sylvia Plath's *The Bell Jar* to the Bad Sex Award: A partial account of the uses of mathematics in fiction. *British Society for the History of Mathematics Bulletin* **25** (2) (2010), 58–66. Based on the author's introductory remarks for the BSHM meeting on 'Mathematics and fiction,' held May 2009. (PWH) #38.1.9

Nicodemi, Olympia. Galileo and Oresme: Who Is Modern? Who Is Medieval? *Mathematics Magazine* **83** (1) (2010), 24–32. The article compares the approach and analysis of uniform acceleration by Galileo (1564–1642) with that of Oresme (1323–1382). It is concluded that while Oresme's approach is more easily understood by the modern reader, Galileo's treatment is more modern in that it is backed by experiment. The article includes a digression in which Oresme's proof of the sum of infinite series is shown to exhibit an approach similar to his analysis of uniform acceleration. (JVR) #38.1.10

de Nonancourt, François. *See* #38.1.12.

Oliveri, Gianluigi. *A Realist Philosophy of Mathematics* (*Texts in Philosophy* **6**). Preface by Donald Gillies. London: College Publications, 2007, xii + 276 pp. The author aims to synthesize the analytic and historical approaches to the philosophy of mathematics by treating mathematics as a quasi-empirical science, meaning that mathematical theories are fallible in principle. The author develops a new definition for realism and explores the debate between advocates of realism and anti-realists. See the review by Pierre Kerszberg in *Mathematical Reviews* 2535442 (**2010j**:00007). (AAH) #38.1.11

Păcurar, Mădălina. *See* #38.1.4.

Pagola, Javier. *See* #38.1.5.

Pascal, Blaise; Arnauld, Antoine; and de Nonancourt, François. *Géométries de Port-Royal* [*Geometries of Port-Royal*] (*Sources Classiques* **100**). Critical edition by Dominique Descotes. Paris: Honoré Champion Éditeur, 867 pp. This book presents the critical edition of three mathematical texts taught at Port-Royal in Paris – Pascal's introduction to geometry, Arnauld's elements of geometry, and de Nonancourt's Euclide logisticus. It includes an extensive bibliography. See the review by Youcef Guergour in *Zentralblatt MATH* 1187.01037. (LM) #38.1.12

Petković, Miodrag S. *Famous Puzzles of Great Mathematicians*, Providence, RI: American Mathematical Society, 2009, xviii + 325 pp. This book presents a collection of 180 mathematical puzzles and elementary problems, mainly on number theory, graph theory, optimization, and probability, that great mathematicians have posed, discussed, and/or solved. (LM) #38.1.13

Pintado, Natalia. *See* #38.1.5.

Schattschneider, Doris. The mathematical side of M.C. Escher. *Notices of the American Mathematical Society* **57** (6) (2010), 706–718. An exposition of some of the mathematics behind Escher's art, including his (unpublished) research into divisions of the plane. (DJM) #38.1.14

Schwartz, Randy K. Combining strands of many colors: Episodes from medieval Islam for the mathematics classroom. *Loci: Convergence* **7** (2010), 9 pp., electronic only. The author describes five modules using mathematics from medieval Islam that can be introduced into appropriate classes. (DJM) #38.1.15

Siegmund-Schultze, Reinhard. The first decade of the Institut Henri Poincaré, in particular the role of the Rockefeller foundation. *European Mathematical Society Newsletter* **73** (2009), 35–37. This article discusses the first decade of the Institut Henri Poincaré with a broader look at political, economic, and scientific context of French mathematics at that time. (LM) #38.1.16

Wardhaugh, Benjamin. 'Let us put on the shade of Newton': Isaac Newton on stage, 1829–2006. *British Society for the History of Mathematics Bulletin* **25** (2) (2010), 67–80. Examines eight plays featuring Newton as a character, considering the various aspects of his personality, biography, and work portrayed in each. (PWH) #38.1.17

Mesopotamia

Friberg, Jöran. A geometric algorithm with solutions to quadratic equations in a Sumerian juridical document from Ur III Umma. *Cuneiform Digital Library Journal* (3) (2009), 27 pp., electronic only. An ingenious reconstruction of the procedures underlying the division of an irregularly-shaped orchard into five parallel sections of equal area in an Ur III juridical tablet, YBC 3879. (DJM) #38.1.18

Proust, Christine. Numerical and metrological graphemes: From cuneiform to transliteration. *Cuneiform Digital Library Journal* (1) (2009), 27 pp., electronic only. The author analyses texts used in scribal schools to teach both metrological notation and place value notation and argues for greater standardization in transliteration conventions. (DJM) #38.1.19

Steele, J.M. Newly identified lunar and planetary tables from Babylon in the British Museum. *SCIAMVS* **11** (2010), 211–239. Publishes a collection of lunar and planetary tables identified by the author in the British Museum since 2005. Some of the mostly small fragments form joins to previously-published tablets. (DJM) #38.1.20

India

Hayashi, Takao. *Bījagaṇita* of Bhāskara. *SCIAMVS* **10** (2009), 3–301. This is a preliminary version of a full critical edition of the magisterial 12th-century Indian textbook on algebra, a work that has been published several times but still lacks a definitively established text. The Sanskrit edition is accompanied by appendices including a concordance of rules and problems and a glossary and index of technical terms. See the review by Benno van Dalen in *Zentralblatt MATH* 1192.01003. (KP) #38.1.21

Papatzacos, Paul. Formula for π from Kerala in the 16th century [in Norwegian]. *Normat* **56** (1) (2008), 24–33. Describes the version of the Mādhava-Leibniz infinite series for π known by the start of the 15th century to the "Kerala school" in India, and suggests an alternative reconstruction of the formula for the remainder term they devised to accelerate its convergence. (KP) #38.1.22

See also #38.1.2.

China

Dauben, Joseph W. Zhu Shijie's Siyuan Yujian. Jade mirror of the four unknowns, in Hecht, Hartmut et al., eds., *Kosmos und Zahl. Beiträge zur Mathematik- und Astronomiegeschichte, zu Alexander von Humboldt und Leibniz* (*Boethius. Texte und Abhandlungen zur Geschichte der Mathematik und der Naturwissenschaften* **58**) (Stuttgart: Franz Steiner Verlag, 2008), pp. 319–330. The 1303 Chinese treatise discussed here (sometimes translated as "Precious mirror of the four elements") uses ingenious spatial arrangements of traditional counting rods to devise methods for solving equations with as many as four different variables. See the review by J.-C. Martzloff in *Zentralblatt MATH* 1188.01005. (KP) #38.1.23

Islamic/Islamicate

Bellosta, Hélène. Le traité de Thabit ibn Qurra sur *La figure secteur* [Thabit ibn Qurra's treatise *On the sector figure*]. *Arabic Sciences and Philosophy* **14** (1) (2004), 145–168. This paper discusses Thābit's groundbreaking 9-century effort to integrate Greek spherical trigonometry (based on the so-called "sector figure" or "Menelaus figure" composed of four intersecting great-circle arcs) into the Arabic scientific tradition. It notes the 2001 publication of an edition with English translation of this work by Richard Lorch. (KP) #38.1.24

De Young, Gregg. The *Taḥrīr Kitāb Uṣūl Uqlīdis* of Naṣīr al-Dīn al-Ṭūsī: Its sources. *Zeitschrift für Geschichte der arabisch-islamischen Wissenschaften* **18** (2008/2009), 1–71. Connects the famous *Commentary on the Elements of Euclid* by the 13th-century mathematician–astronomer al-Ṭūsī with earlier Arabic studies and commentaries on Euclid's geometry, and offers a reconstruction of Ṭūsī's use of these sources to create his own recension. (KP) #38.1.25

Djebbar, Ahmed. *L'algèbre arabe. Genèse d'un art* [*Arabic Algebra. Genesis of an Art*]. Preface by Bernard Maitte. Paris: Vuibert; Paris: ADAPT, 2005, viii + 214 pp. An overview in three chapters of the development of algebra in the eastern and western portions of the Arabic world from the 9th to 15th centuries. Problems are given in modern notation in the text and in original form (in French translation) in the second appendix. There is also an appendix with brief biographies of Arab mathematicians and an extensive bibliography. See the review by Bruno Poizat in *Mathematical Reviews* 2538093 (**2010k**:01002). (AAH) #38.1.26

El-Rouayheb, Khaled. Impossible antecedents and their consequences: Some 13th-century Arabic discussions. *History and Philosophy of Logic* **30** (3) (2009), 209–225. This paper investigates in particular the arguments of the logician al-Khūnajī about the implication of contradictory propositions from a necessarily false or "impossible" antecedent, and their rejection by contemporaries such as Naṣīr al-Dīn al-Ṭūsī. (KP) #38.1.27

Hogendijk, Jan P. Al-Kāshī's determination of π to 16 decimals in an old manuscript. With an appendix containing Al-Kāshī's *Treatise on the Circumference* in Arabic. *Zeitschrift für Geschichte der arabisch-islamischen Wissenschaften* **18** (2008/2009), 73–153. Summarizes, analyzes, and provides a facsimile edition of an early manuscript of al-Kāshī's treatise on computing the circumference of a circle (which has not previously been published in its entirety), and compares it with the early modern calculation of π by the Dutch mathematician van Ceulen. See the review by Benno van Dalen in *Zentralblatt MATH* 1186.01003. (KP) #38.1.28

Katscher, Friedrich. Extracting square roots made easy: A little known medieval method. *Loci: Convergence* **7** (2010), 9 pp., electronic only. Discusses the iterative procedure for extraction of square roots of the 12th-century mathematician Abu Zakariya Muhammad ibn Abu Abd Allah Ayyash al-Hassar; its subsequent appearance in the work of Fibonacci, Pacioli, Tartaglia, and Cardano, and its disappearance after the 18th century. (DJM) #38.1.29

Lagerlund, Henrik. Avicenna and Ṭūsī on modal logic. *History and Philosophy of Logic* **30** (2) (2009), 227–239. This book outlines the views of Avicenna and al-Ṭūsī on Aristotelian logic. It also compares some of Avicenna's and al-Ṭūsī's remarks with the more well known Western medieval logical tradition. See the review by Mowaffaq Hajja in *Zentralblatt MATH* 1187.01007. (GSS) #38.1.30

Moussa, Ali. The trigonometric functions, as they were in the Arabic–Islamic civilization. *Arabic Sciences and Philosophy* **20** (1) (2010), 93–104. The author presents a new understanding concerning the development of trigonometric functions during the Arabic–Islamic civilization. In the Greek/Indian period different radii were used in connection with the chord and later sine. In the Arabic–Islamic period the radius was fixed. Later new functions were introduced as functions of lengths, not angles, and not bounded to the circle. Finally new terms for functions of angles bounded to the circle appeared, the radius was again fixed. See the review by Jebrel M. Habeb in *Zentralblatt MATH* 1189.01009. (GSS) #38.1.31

Samsó, Julio. *Astrometeorologa y astrologa medievales* [*Medieval astrometeorology and astrology*], Barcelona: Universitat de Barcelona, 2008, xxxii + 242 pp. A collection of previously published but not always readily accessible articles on Arab astrology, collected and supplemented by a bibliographic index of the author's publications and a preface by some of the author's colleagues. (KP) #38.1.32

Taheri, Jafar. Mathematical knowledge of architecture in the works of Kāshānī. *Nexus Network Journal* **11** (1) (2009), 77–88. Treats the application of geometry to architecture and considerations of architectural practice by the 15th-century Persian mathematician and astronomer Ghiyāth al-Dīn Jamshīd Kāshānī (also known as al-Kāshī). (KP) #38.1.33

Thom, Paul. Abharī on the logic of conjunctive terms. *Arabic Sciences and Philosophy* **20** (1) (2010), 105–117. Summarizes the work of the 13th-century Persian philosopher and astronomer–mathematician Athīr al-Dīn al-Abharī on various logics of propositions containing complex terms, discusses contemporary criticisms of it, and compares it to the approaches of some modern logicians. See the review by Mowaffaq Hajja in *Zentralblatt MATH* 1189.01010. (KP) #38.1.34

See also #38.1.2; #38.1.15.

Other non-Western

Kim, Jang Hoon; and Park, Sang Hun. Mathematical interpretation of a thirteen hundred year old stone masonry observatory. *Nexus Network Journal* **11** (1) (2009), 23–34. This paper discusses various implications suggested by a thirteen hundred year old stone masonry structure on astronomy, religion, symbol, mathematics in architectural form and construction, built by Queen Sun-Duk of the Silla Dynasty. (LM) #38.1.35

Park, Sang Hun. *See* #38.1.35.

Togawa, Kazuhito. *See* #38.1.36.

Wakuta, Kazuyoshi; and Togawa, Kazuhito. The Sangaku lost from the Aoshi Jinjya in Nagaoka [in Japanese]. *Research Reports of Nagaoka National College of Technology* **45** (2) (2009), 25–30. This work contains a reconstitution of a tablet about a trapezium and two small circles inscribed in a larger circle. The article also contains an overall presentation of the history of these tablets and a full mathematical justification of the solution of the problem. See the review by J.-C. Martzloff in *Zentralblatt MATH* 1188.01004. (GSS) #38.1.36

Antiquity

Acerbi, Fabio. Homeomeric lines in Greek mathematics. *Science in Context* **23** (1) (2010), 1–37. Reviews and discusses Apollonius's and Geminus's early contributions to homeomeric line theory in mathematical and philosophical terms and provides a proof that the circle is the only plane homeomeric curve. See the review by H. Guggenheimer in *Zentralblatt MATH* 1189.01002. (ML) #38.1.37

Acerbi, Fabio; Vinel, Nicolas; and Vitrac, Bernard. Les *Prolégomènes à l'Almageste*. Une édition à partir des manuscrits les plus anciens: Introduction générale – Parties I–III [The *Prolegomena to the Almagest*. An edition of the oldest manuscripts: General Introduction – Parts I–III]. *SCIAMVS* **11** (2010), 53–210. The first in a series, this paper presents a critical edition with introduction, translation and apparatus of the prolegomena to the *Almagest*. The paper comprises a general introduction, and three chapters covering isagogical preliminaries, the treatise on isoperimetric figures, and measurement of the earth. (DJM) #38.1.38

Chernoglazov, Alexander. *See* #38.1.42.

Maierù, Luigi. *Costruire . . . in geometria. Un excursus nella matematica greca* [*To Construct . . . in Geometry. An Excursion into Greek Mathematics*], Rende: Università della Calabria, Centro Editoriale e Librario, 2010, 260 pp. This book gives a detailed account of the employment of constructions in the work of Archimedes, Apollonius, Pappus, and Eutocius, with an emphasis on the "epistemological role" of the construction with respect to the proof. See the review by Luigi Borzacchini in *Zentralblatt MATH* 1187.01003. (GSS) #38.1.39

Netz, Reviel. *Ludic Proof. Greek Mathematics and the Alexandrian Aesthetic*, Cambridge: Cambridge University Press, 2009, 255 pp. A very meticulous study of the compositional structure and style of mathematical texts written in Hellenistic times, as well as the similarities between them and those encountered in Alexandrian poetics. The author

goes into extensive detail over the content of several mathematical texts, from Archimedes, Apollonius, and Eratosthenes. The author concludes that there is "a certain homology of style between the exact sciences and poetry in the Hellenistic world." See the review by Victor V. Pambuccian in *Zentralblatt MATH* 1188.01002. (GSS) #38.1.40

Saito, Ken. *See* #38.1.41.

Sidoli, Nathan; and Saito, Ken. The role of geometrical construction in Theodosius's *Spherics*. *Archive for History of Exact Sciences* **63** (6) (2009), 581–609. The paper examines the first surviving Greek treatise on spherical geometry and draws the conclusion that "geometric problems originated in the practical issues involved in actually making diagrams, whereas constructions are abstractions of these processes that are used to introduce objects not given at the outset, so that their properties can be used in the argument." (KP) #38.1.41

Vinel, Nicolas. *See* #38.1.38.

Vitrac, Bernard. *See* #38.1.38.

Zhmud, Leonid. *The Origin of the History of Science in Classical Antiquity* (*Peripatoi. Philologisch-Historische Studien zum Aristotelismus* **19**). Translated by Alexander Chernoglazov. Berlin: Walter de Gruyter, 2006, xii + 331 pp. Surveys and analyzes Hellenistic historiography of science (primarily the mathematical sciences) from the "origin myths" recounted by Herodotus, through the doxographic work of Eudemus, up to the Byzantine era. See the review by Victor V. Pambuccian in *Zentralblatt MATH* 1188.01003. (KP) #38.1.42

See also #38.1.2; and #38.1.8.

Middle ages

Biard, Joël; and Rommevaux, Sabine. La question de Blaise de Parme sur le contact entre une sphère et un plan [Blasius of Parma's question concerning contact between a sphere and a plane]. With the Latin edition of Parma's question. *Early Science and Medicine* **14** (4) (2009), 476–538. This article presents a critical edition and a French translation of the question "Utrum spericum tangit planum in puncto" by Blasius of Parma (1416), including a historical and doctrinal introduction. (LM) #38.1.43

Docampo Rey, Javier. A new source for medieval mathematics in the Iberian Peninsula: The commercial arithmetic in MS 10106 (Biblioteca Nacional, Madrid). With an edited medieval text in Castilian. *Revue d'Histoire des Mathématiques* **15** (1) (2009), 123–177. This paper presents a critical edition of a short commercial arithmetic written in Castilian (ca. 1400). (LM) #38.1.44

Heeffer, Albrecht. Algebraic partitioning problems from Luca Pacioli's Perugia manuscript (Vat. Lat. 3129). *SCIAMVS* **11** (2010), 3–51. A transcription and English translation of the chapter concerning algebraic partitioning problems of Pacioli's little-studied and untitled manuscript from his time teaching in Perugia (1477–1480), together with a mathematical commentary of the contents. (DJM) #38.1.45

Piron, Sylvain. Le traitement de l'incertitude commerciale dans la scolastique médiévale [The treatment of commercial uncertainty during medieval scholasticism]. *Journal Électronique d'Histoire des Probabilités et de la Statistique/Electronic Journal for History of*

Probability and Statistics **3** (1) (2007), 31 pp., electronic only. This paper concerns scholastic arguments for avoiding the prohibition on usury while facing uncertainty in business decisions. See the review by Gerald L. Alexanderson in *Zentralblatt MATH* 1190.01005. (DJM) #38.1.46

Rommevaux, Sabine. *See* #38.1.43.

See also #38.1.10; and #38.1.32.

Renaissance

Alonso-Rodríguez, Miguel Ángel. *See* #38.1.47.

Calvo-López, José; and Alonso-Rodríguez, Miguel Ángel. Perspective versus Stereotomy: From quattrocento polyhedral rings to 16th-century Spanish torus vaults. *Nexus Network Journal* **12** (1) (2010), 75–111. This article discusses quattrocento perspective and Spanish 16th-century stereotomy focusing on looking for common sources for perspectival and stereotomic methods. (LM) #38.1.47

Ceccarelli, Marco. Renaissance of machines in Italy: From Brunelleschi to Galilei through Francesco di Giorgio and Leonardo. *Mechanism and Machine Theory* **43** (12) (2008), 1530–1542. The author discusses the historical evolution of machines in Italy from early modern approaches in 14th century to the 17th century when academic formation on machine knowledge started. (LM) #38.1.48

Ceccarelli, Marco. Early TMM in *Le Mecaniche* by Galileo Galilei in 1593. *Mechanism and Machine Theory* **41** (12) (2006), 1401–1406. The author reviews and interprets Galilei's work on the *Theory of Machines*. (LM) #38.1.49

Helfgott, Harald; and Helfgott, Michel. A modern vision of the work of Cardano and Ferrari on quartics. *Loci: Convergence* **6** (2009), 11 pp., electronic only. Using the lens of modern algebraic techniques, the authors analyze and classify Cardano's (and Ferrari's) approach to solutions of quartics in Chapter 39 of the *Ars Magna*. (DJM) #38.1.50

Helfgott, Michel. *See* #38.1.50.

Hogendijk, Jan P. The scholar and the fencing master: The exchanges between Joseph Justus Scaliger and Ludolph van Ceulen on the circle quadrature (1594–1596). *Historia Mathematica* **37** (3) (2010), 345–375. Ludolph van Ceulen's *Vanden Circkel* contained an analysis of a series of propositions from a "highly learned man." In this paper, the author identifies this anonymous gentleman as Joseph Justus Scaliger (1540–1609), and shows that van Ceulen's chapter is a rebuttal of Scaliger's *Cyclometria* of 1594. (DJM) #38.1.51

Verweij, Agnes. Perspective in a box. *Nexus Network Journal* **12** (1) (2010), 47–62. This article discusses the setup of the perspective in perspective boxes, i.e., empty boxes with, on the inner sides, perspective pictures giving a surprising spatial effect when observed through the peephole. (LM) #38.1.52

Wepster, Steven. Ludolph van Ceulen in Dutch circles [in Dutch]. *Nieuw Archief voor Wiskunde* **11** (1) (2010), 63–69. Describes the life and mathematics of the Dutch mathematician van Ceulen (1540–1610), best known for his calculations of π to many decimal places. (KP) #38.1.53

See also #38.1.2; #38.1.8; #38.1.28; #38.1.29; and #38.1.54.

17th century

Arana, Andrew. *See* #38.1.68.

Bockstaele, Paul. Between Viète and Descartes: Adriaan van Roomen and the *Mathesis Universalis*. *Archive for History of Exact Sciences* **63** (4) (2009), 433–470. The Dutch mathematician van Roomen's 1597 outline of "universal mathematics," attempting to systematize mathematical rules for computation of all types of quantities in a uniform way, is here compared with a later version of the work that was not published. (KP) #38.1.54

Bos, Erik-Jan. Princess Elizabeth of Bohemia and Descartes' letters (1650–1665). *Historia Mathematica* **37** (3) (2010), 485–502. The author describes the context behind Princess Elizabeth's sharing of letters from Descartes bearing on both philosophy and mathematics after his death as part of her growing intellectual stature. The author also publishes for the first time a letter from Princess Elizabeth outlining her solution to a problem given to her by Descartes. (DJM) #38.1.55

Brunetti, Franz. Galileo Galilei: The science, the literature, the poetry. *La Matematica nella Società e nella Cultura. Serie I. Rivista della Unione Matematica Italiana* **2** (1) (2009), 71–99. This paper discusses Galileo's role in the history of Italian literature as the author of essays about Dante, Ariosto and Tasso, and also looks at the opinions about his prose held by great poets and historians of literature. See the review by Luigi Borzacchini in *Zentralblatt MATH* 1186.01018. (GSS) #38.1.56

Clark, Kathleen M.; and Montelle, Clemency. Logarithms: The early history of a familiar function. *Loci: Convergence* **7** (2010), 11 pp., electronic only. The authors discuss the near simultaneous introduction of the logarithmic relation, $\log(ab) = \log(a) + \log(b)$, by John Napier (1550–1617) and Joost Bürgi (1552–1632), their production of logarithmic tables, and the portrayal of this early period of logarithms in later histories. (DJM) #38.1.57

Davies, E.B. Some reflections on Newton's *Principia*. *The British Journal for the History of Science* **42** (2) (2009), 211–224. Evaluates the claims made by Newton in *Principia Mathematica* about Newton's own contributions and that of others based on the recent translation of *Principia* by Cohen and Whitman. See the review by Štefan Porubský in *Zentralblatt MATH* 1190.01028. (ML) #38.1.58

de Bruycker, Angelo. 'To the adornment and honor of the city': The mathematics course of the Flemish Jesuits in the 17th century. *British Society for the History of Mathematics Bulletin* **24** (3) (2009), 135–146. Considers the context of the foundation and organization of the Flemish course of mathematics, arguing that it was not a mere copy of Clavius's Academy in Rome. (PWH) #38.1.59

de Wreede, Liesbeth C. A dialogue on the use of arithmetic in geometry: Van Ceulen's and Snellius's *Fundamenta Arithmetica et Geometrica*. *Historia Mathematica* **37** (3) (2010), 376–402. The author presents Willebrord Snellius' 1615 Latin translation and adaptation of Van Ceulen's Dutch work, *Arithmetische en Geometrische Fondamenten* (also of 1615) as a dialogue in early modern mathematics between the humanist approach of Snellius and the practitioner Van Ceulen. (DJM) #38.1.60

Descotes, Dominique. An unknown mathematical manuscript by Blaise Pascal. *Historia Mathematica* **37** (3) (2010), 503–534. The previously unknown handwritten manuscript

appears in the *Recueil Original* of the *Pensées*. The author gives a technical analysis of the manuscript and its contents, which concern a theorem on a construction involving a double *onglet* that never made it into print. (DJM) #38.1.61

Dietrich, Urs; and Girstmair, Kurt. John Napiers Trigonometrie – ein Blick zurück [John Napier's trigonometry – looking back]. *Mathematische Semesterberichte* **56** (2) (2009), 215–232. Napier's logarithms have overshadowed his work on trigonometry, but he saw trigonometry as the main venue for use of logarithms. The authors seek to recalibrate perceptions of his contributions. See the review by W. Kaunzner in *Zentralblatt MATH* 1187.01017. (DJM) #38.1.62

Frey, Gerhard. The way to the proof of Fermat's last theorem. *Annales de la Faculté des Sciences de Toulouse. Mathématiques.* **18** (6) (2009), 5–23. The author was a key contributor to the resolution of Fermat's Last Theorem (FLT). In this paper, which is based on a conference lecture, he outlines the process and people involved in the proof, in order to demonstrate that FLT is valid due to "general principles concerning the Galois group of rational numbers and its geometric and automorphic representations." See the review by Robert Juricevic in *Mathematical Reviews* 2561373 (**2010h**:11044). (AAH) #38.1.63

Galuzzi, Massimo. Newton's attempt to construct a unitary view of mathematics. *Historia Mathematica* **37** (3) (2010), 535–562. The author probes Newton's late and largely unpublished attempts to integrate his calculus of fluxions into the framework of classical Greek geometry in a unified treatise. (DJM) #38.1.64

Girstmair, Kurt. *See* #38.1.62.

Giusti, Enrico. Les méthodes des maxima et minima de Fermat [Fermat's methods of maxima and minima]. *Annales de la Faculté des Sciences de Toulouse. Série VI. Mathématiques* **18** (fascicule special) (2009), 59–85. Examines in detail the first six Latin writings of Fermat on "proto-calculus" methods for determining maxima and minima and tangents to curves, with particular emphasis on his concept of "adequality" (roughly, equality up to an infinitesimal difference). See the review by Klaus Barner in *Mathematical Reviews* 2561375 (**2010j**:49003). (KP) #38.1.65

Kimura, Takuma; and Nakazato, Hiroshi. Kepler's octic curve as a model of Mars's orbit. *Far East Journal of Applied Mathematics* **34** (1) (2009), 21–30. Uses the theory of algebraic curves to analyze one of the ovoid or "egg-shaped" curves that Kepler experimented with in his orbital models before settling on ellipses. (KP) #38.1.66

Leahy, Andrew. James Gregory and the Pappus–Guldin Theorem. *Loci: Convergence* **6** (2009), 14 pp., electronic only. Leahy explores James Gregory's proof in his *Geometriae Pars Universalis* of the Pappus–Guldin Theorem equating volumes of solids of revolution with right cylinders of height derived from the center of gravity. Leahy shows that Gregory builds an abstract geometric setting from which the needed result, and others, are easily derived. Latin originals and English translations of the relevant propositions are given. (DJM) #38.1.67

Mancosu, Paolo; and Arana, Andrew. Descartes and the cylindrical helix. *Historia Mathematica* **37** (3) (2010), 403–427. There has been a debate about whether the term "helice" used by Descartes in correspondence with Mersenne in 1629 referred to a cylindrical helix or an Archimedean spiral. The authors here argue for the former interpretation. (DJM) #38.1.68

Maronne, Sébastien. The ovals in the *Excerpta Mathematica* and the origins of Descartes' method of normals. *Historia Mathematica* **37** (3) (2010), 460–484. The posthumously-published *Excerpta Mathematica* contain the only reference to Descartes' method of normals before *La Géométrie*. The author studies Descartes' use of ovals in the context of dioptrics in the fragmentary *Excerpta Mathematica* as a means of uncovering the origins of the method of normals. (DJM) #38.1.69

Montelle, Clemency. *See* #38.1.57.

Nakazato, Hiroshi. *See* #38.1.66.

Palmieri, Paolo. Superposition: On Cavalieri's practice of mathematics. *Archive for History of Exact Sciences* **63** (5) (2009), 471–495. The author focuses on how Cavalieri manipulates geometrical objects in his geometry of indivisibles, in particular superposition of geometrical objects. (LM) #38.1.70

Rabouin, David. What Descartes knew of mathematics in 1628. *Historia Mathematica* **37** (3) (2010), 428–459. Drawing on contemporary sources, in particular the *Journal* of Isaac Beeckman, the author tries to reconstruct Descartes' mathematical achievements in 1628 and 1629, terming his article a work of "deflationist history." (DJM) #38.1.71

Siebert, Harald. *Die große kosmologische Kontroverse. Rekonstruktionsversuche anhand des Itinerarium exstaticum von Athanasius Kircher SJ (1602–1680)* [*The Great Cosmological Controversy. Reconstruction Attempts by Means of the Itinerarium exstaticum of Athanasius Kircher SJ (1602–1680)*] (*Boethius: Texte und Abhandlungen zur Geschichte der Mathematik und der Naturwissenschaften* **55**), Stuttgart: Franz Steiner Verlag, 2006, 383 pp. This book discusses the position of Athaniasius Kircher in the great cosmological controversy between the Copernicans and their opponents. Kircher's position is a middle ground between the Copernicans and the geocentrists, and is discussed at length. In Kircher's view although everything moves around the earth, the center of the earth does not coincide with the geometrical center of the universe. The stars are not on a sphere, they are scattered at different distances from the earth in a universe that is much bigger than the classical spherical spatial universe. See the review by Teun Koetsier in *Zentralblatt MATH* 1186.01007. (GSS) #38.1.72

See also #38.1.2; #38.1.10; #38.1.48; #38.1.49; and #38.1.53.

18th century

Barrow-Green, June. Euler as educator. *British Society for the History of Mathematics Bulletin* **25** (1) (2010), 10–22. Examines Euler's interest in education, including his contributions to the restructuring of the preparatory school in St. Petersburg and a number of his textbooks, spanning subjects from arithmetic to military instruction. (PWH) #38.1.73

Debnath, Lokenath. *The Legacy of Leonhard Euler. A Tricentennial Tribute*, London: Imperial College Press, 2010, xxv + 392 pp. This book discusses Euler's heritage in contemporary mathematics, focusing on mathematical subjects related to his works. See the review by Rüdiger Thiele in *Zentralblatt MATH* 1191.01040. (LM) #38.1.74

Demidov, Serguei S. L'influence de Leonhard Euler sur les premiers manuels mathématiques de l'Empire Russe [The influence of Leonhard Euler on the first mathematical

text-books of the Russian Empire], in Brizzi, G.P.; and Tavoni, M.G., eds., *Dalla pecia all' e-book. Libri per l'università: Stampa, editoria, circolazione e lettura. Atti del convegno internazionale di studi. Bologna, 21–25 ottobre 2008* (Bologna: CLUEB, 2009), pp. 455–463. Euler's influence on the development of the school of mathematics in Imperial Russia. See the review by Anatoliy Milka in *Zentralblatt MATH* 1189.01011. (DJM) #38.1.75

Guilbaud, Alexandre; and Jouve, Guillaume. La résolution des équations aux dérivées partielles dans les *Opuscules mathématiques* de d'Alembert (1761–1783) [The solution of partial differential equations in the *Opuscules mathmatiques* of d'Alembert (1761–1783)]. *Revue d'Histoire des Mathématiques* **15** (1) (2009), 59–122. The authors examine d'Alembert's method of solving partial differential equations in physico-mathematical contexts which can be found in the nine volumes of his *Opuscules mathématiques*. In particular, they focus on his research on vibrating strings and the flow of fluids in this late corpus. (LM) #38.1.76

Jouve, Guillaume. *See* #38.1.76.

Meusnier, Norbert. Sur l'histoire de l'enseignment des probabilités et des statistiques [About the history of teaching probability theory and statistics]. *Electronic Journal for History of Probability and Statistics/Journal Électronique d'Histoire des Probabilités et de la Statistique* **2** (1) (2006), 20 pp. Explores the process and obstacles involved in the introduction of instruction in probability and statistics in France. See the review by Youcef Guergour in *Zentralblatt MATH* 1187.01020. (ML) #38.1.77

Nagliati, Iolanda. *La corrispondenza scientifica di Vittorio Fossombroni 1773–1818* [*The Scientific Correspondence of Vittorio Fossombroni 1773–1818*]. With a foreword by Luigi Pepe. Bologna: CLUEB, 2009, 421 pp. This book analyzes Fossombroni's scientific work through three hundred letters written between 1773 and 1818. It includes a text treating the progress of mathematics published by the young Fossombroni in 1781. See the review by Godofredo Iommi Amunátegui in *Mathematical Reviews* 2555804 (**2010j**:01009) (LM) #38.1.78

Preti, Giovanni. Schwarzschild radius before general relativity: Why does Michell–Laplace argument provide the correct answer? *Foundations of Physics* **39** (9) (2009), 1046–1054. Investigates why a Newtonian argument about escape velocity of light from "dark bodies" independently derived in the late 1800's by John Michell and Pierre–Simon Laplace appears consistent with general relativity results concerning black holes. (KP) #38.1.79

Stemkoski, Lee. Investigating Euler's polyhedral formula using original sources. *Loci: Convergence* **6** (2009), 9 pp., electronic only. A guide to leading students through Euler's paper on the polyhedral formula (E230), working from the original Latin source. (DJM) #38.1.80

19th century

Abbott, Edwin A. *Flatland*. An edition with notes and commentary by William F. Lindgren and Thomas F. Banchoff. Washington, DC: Mathematical Association of America; Cambridge: Cambridge University Press, 2010, x + 294 pp. The text of Abbott's second revised edition of 1884, with explanatory notes on the right-hand pages, explaining the

mathematical, philosophical, and Victorian context. The editors have also compiled reviews of *Flatland* and prepared a chronology of Abbott's life and work. See the review by E.J. Barbeau in *Mathematical Reviews* 2573243 (**2010j**:01013). (AAH) #38.1.81

Banchoff, Thomas F. *See* #38.1.81.

Bolker, Ethan D. Gergonne's card trick, positional notation, and radix sort. *Mathematics Magazine* **83** (1) (2010), 46–49. The article describes a card trick attributed to Joseph Diaz Gergonne (1771–1859), explains the mathematics behind the trick, and offers some generalizations. (JVR) #38.1.82

Bradley, Robert E.; and Petrilli, Salvatore J., Jr. Servois' 1814 essay on the principles of the differential calculus. *Loci: Convergence* **7** (2010), 14 pp., electronic only. The authors analyze the 1814 paper, *Reflections on the various systems of exposition of the principles of the differential calculus*, by François–Joseph Servois (1768–1847) on the competing ideas of differentials, limits, and power series expansions in underpinning the calculus. The authors also provide an English translation of the paper. (DJM) #38.1.83

Bradley, Robert E.; and Sandifer, Edward C. *Cauchy's Cours d'analyse*. An annotated translation (*Sources and Studies in the History of Mathematics and Physical Sciences*), New York: Springer, 2009, xx + 411 pp. First English translation of this influential textbook (initially issued in Paris in 1821), based on the 1897 reprint that appeared in Cauchy's collected works. See the review by M.E. Muldoon in *Mathematical Reviews* 2541811 (**2010h**:01011). (AAH) #38.1.84

Corry, Leo. On the history of Fermat's last theorem: Fresh views on an old tale. *Mathematische Semesterberichte* **57** (1) (2010), 123–138. Suggests that there is an exaggeration in the literature on Fermat's last theorem of the role that it played in the mathematical community on the large and small scale as well as discusses work on Fermat's last theorem which the author feels has been overlooked. See the review by Leon Harkleroad in *Zentralblatt MATH* 1189.01014. (ML) #38.1.85

Cox, David A. Why Eisenstein proved the Eisenstein criterion and why Schönemann discovered it first. *Normat* **57** (2) (2009), 49–73, 96. By tracing the development of the ideas that led to the two different problems that guided these mathematicians to the Eisenstein irreducibility criterion, Cox concludes that Schönemann discovered the result several years before Eisenstein did. See the review by Jebrel M. Habeb in *Mathematical Reviews* 2572615 (**2010j**:01007). (AAH) #38.1.86

Craik, Alex D.D. William Wallace's chorograph (1839): A rare mathematical instrument. *British Society for the History of Mathematics Bulletin* **25** (1) (2010), 23–31. Description of use, merits, and demerits of Wallace's instrument for use in cartography and navigation. Author was given access by Wallace's great-great-grandson to the only known copy of the instrument. (PWH) #38.1.87

Ebert, Phillip A.; and Rossberg, Marcus. Cantor on Frege's *Foundations of Arithmetic*: Cantor's 1885 review of Frege's *Die Grundlagen der Arithmetik*. *History and Philosophy of Logic* **30** (4) (2009), 341–348. An English translation of Cantor's review of Frege's *Grundlagen der Arthmetik* with commentary on the nature of Cantor's warning to Frege on the notion of extension. See the review by R.W. van der Waal in *Zentralblatt MATH* 1188.01010. (ML) #38.1.88

Ehrhardt, Caroline. La construction du mythe d'Évariste Galois à la fin du XIXe siècle [The construction of the myth of Evariste Galois at the end of the 19th century]. *Quadrature* **75** (2010), 35–42. This paper attempts to explain the development in biographical writing of the picture of Galois: from gifted mathematician working on solvability of polynomials to a visionary and republican martyr. See the review by Siegfried J. Gottwald in *Zentralblatt MATH* 1187.01026. (GSS) #38.1.89

Ehrhardt, Caroline. A social history of the "Galois Affair" at the Paris Academy of Sciences (1831). *Science in Context* **23** (1) (2010), 91–119. Discusses the historical context of the rejection of Galois's 1831 paper *Les condition de résolubilité des équations par radicaux* by the French Academy of Sciences. See the review by Antonín Slavik in *Zentralblatt MATH* 1190.01007. (ML) #38.1.90

Ferreirós, José. Hilbert, logicism, and mathematical existence. *Synthese* **170** (1) (2009), 33–70. Argues that an allegiance to Dedekind-style logicism in Hilbert's early foundational views influenced his ideas on the foundations of geometry and the development of his thinking on mathematical existence and related topics. (KP) #38.1.91

Gandon, Sébastien; and Perrin, Yvette. Le problème de la définition de l'aire d'une surface gauche: Peano et Lebesgue [The problem of defining the area of a skew surface: Peano and Lebesgue]. *Archive for History of Exact Sciences* **63** (6) (2009), 665–704. Traces the history of mathematicians' attempts to repair the flawed definition of the area of a surface bounded by a curve given by J.A. Serret. The authors present in detail the solutions conceived by Lebesgue and by Peano. (KP) #38.1.92

Göbel, Silke. *Jahrbuch über die Fortschritte der Mathematik* and *Zentralblatt MATH* – reporting on more than 140 years of mathematics. *European Mathematical Society Newsletter* **73** (2009), 45–46. The author discusses the history of the *Jahrbuch über die Fortschritte der Mathematik* and the *Zentralblatt MATH* providing some details of the reviewing tasks throughout the centuries. (LM) #38.1.93

Gray, Jeremy. Berlin in the 19th century. *European Mathematical Society Newsletter* **72** (2009), 29–33. This article analyzes mathematics in Berlin in the second half of the 19th century and how Berlin lost its leading place for mathematics in the world. (LM) #38.1.94

Hartveit, Marit. How Flora got her cap: The higher education of women in Edinburgh. *British Society for the History of Mathematics Bulletin* **24** (3) (2009), 147–158. Outlines the history of the Edinburgh Association for the University Education of Women, established in 1867 to provide higher education to women, who were at the time denied access to Scottish universities. Focuses on the Association's record in teaching mathematics. (PWH) #38.1.95

Hartveit, Marit. Death of a schoolmaster. *European Mathematical Society Newsletter* **74** (2009), 27–30. The early history of the Edinburgh Mathematical Society is discussed and its development into its current form. (DJM) #38.1.96

Jenkins, Alice. Mathematics and mental health in early 19th-century England. *British Society for the History of Mathematics Bulletin* **25** (2) (2010), 92–103. Considers the role of mathematics in the emerging psychiatric literature of 19th-century England, outlining a framework for the study of mathematics and mental health during this period. (PWH) #38.1.97

Kannenberg, Lloyd. *See* #38.1.104.

Keßler, Gottfried. *See* #38.1.104.

Künne, Wolfgang. *Die philosophische Logik Gottlob Freges. Ein Kommentar mit den Texten des Vorworts zu* Grundgesetze der Arithmetik *und der* Logischen Untersuchungen I–IV [*The Philosophical Logic of Gottlob Frege. A Commentary with Texts of the Forewords from* Grundgesetze der Arithmetik *and* Logischen Untersuchungen I–IV] (*Klostermann RoteReihe* [*Klostermann Red Series*]), Frankfurt am Main: Vittorio Klostermann, 2010, 840 pp. Edits and comments upon Frege's forewords and analyzes their arguments especially concerning logic and philosophy of language. (KP) #38.1.98

Labbé, Morgane. Le séminaire de statistiques du Bureau prussien de statistique (1862–1900). Former des administrateurs à la statistique [The seminar of statistics of the Prussian office of statistics. How to educate administration employers in statistics]. *Electronic Journal for History of Probability and Statistics/Journal Électronique d'Histoire des Probabilités et de la Statistique* **2** (2) (2006), 29 pp. Addresses the history of the scientific activities of the seminar of statistics of the Prussian office of statistics and how training proceeded for staff at the office of statistics by looking at the creation of the seminar, its function and its program. See the review by Youcef Guergour in *Zentralblatt MATH* 1187.01021. (ML) #38.1.99

Lindgren, William F. *See* #38.1.81.

Liskowacka, Jolanta. *See* #38.1.104.

Lützen, Jesper. A scientific duo: Reflections on the interplay between mathematics and physics 1809–1950. *European Mathematical Society Newsletter* **60** (2006), 23–27. This paper gives illustrations of way problems in physics have generated new mathematics, which in turn has been useful in later physical theories. Examples range from Sturm–Liouville theory to Hertz's mechanics and theory of distributions. See the review by Albert C. Lewis in *Zentralblatt MATH* 1189.01017. (DJM) #38.1.100

Marle, Charles-Michel. The inception of symplectic geometry: The works of Lagrange and Poisson during the years 1808–1810. *Letters in Mathematical Physics* **90** (2009), 3–21. This letter analyzes papers by Lagrange and Poisson written from 1808 to 1810, revealing that two modern constructs in symplectic and Poisson geometry have their foundations in the works of these two mathematicians. Specifically, these are the invariance of the symplectic structure under a Hamiltonian flow and the properties of the Poisson bracket. Both concepts arose via the study of planetary motion. Although the letter is historical in nature it invokes the language of modern global analysis in order to establish the provenance of these two concepts. (JKL) #38.1.101

Pepe, Luigi. Towards rigor. The manuals of calculus in 19th century Italy, in Brizzi, G.P.; and Tavoni, M.G., eds., *Dalla pecia all'e-book. Libri per l'università: Stampa, editoria, circolazione e lettura. Atti del convegno internazionale di studi. Bologna, 21–25 ottobre 2008* (Bologna: CLUEB, 2009), pp. 393–413. The author traces the gradual introduction of rigor into Italian calculus as expressed in university textbooks from the 18th century through to the end of the 19th century. See the review by Jens Høyrup in *Zentralblatt MATH* 1190.01008. (DJM) #38.1.102

Perrin, Yvette. *See* #38.1.92.

Petrilli, Salvatore J., Jr. François–Joseph Servois: Priest, artillery officer, and professor of mathematics. *Loci: Convergence* **7** (2010), 9 pp., electronic only. A brief survey of the life and mathematical work of Servois. (DJM) #38.1.103

Petrilli, Salvatore J., Jr. *See* #38.1.83.

Petsche, Hans-Joachim; Kannenberg, Lloyd; Keßler, Gottfried; and Liskowacka, Jolanta, eds. *Hermann Graßmann. Roots and Traces*, Basel: Birkhäuser, 2009. xii + 256 pp. The last in a series of three volumes on Grassmann and his work, devoted to the comparatively few surviving archival documents relating to Grassmann, all of which are presented in both German and English. Includes many pictures and facsimiles. See the review by Karin Reich in *Zentralblatt MATH* 1190.01020. (KP) #38.1.104

Rizza, Davide. Abstraction and intuition in Peano's axiomatization of geometry. *History and Philosophy of Logic* **30** (4) (2009), 349–368. Examines the role of axiomatization as a method for Peano to restructure geometry and isolate its organizing principles. See the review by R.W. van der Waall in *Zentralblatt MATH* 1188.01011. (ML) #38.1.105

Rossberg, Marcus. *See* #38.1.88.

Rowe, David E. Debating Grassmann's mathematics: Schlegel versus Klein. *Mathematical Intelligencer* **32** (1) (2010), 41–48. A detailed account of Victor Schlegel's (1843–1905) attempts to champion Hermann Grassmann's (1809–1877) ideas and work with special emphasis on his book, *Ausdehnungslehre* (1844, 1862). The author describes Grassmann's career as an Oberlehrer in the German mathematical community, as well as the influence of university based mathematicians, particularly Felix Klein (1849–1925), who held a competing view of geometry. (FA) #38.1.106

Sandifer, Edward C. *See* #38.1.84.

Schupp, Hans. The broken stick reconsidered again. *Mathematical Intelligencer* **32** (1) (2010), 8–9. An exegesis of the history of the broken stick (bâton brisé) problem in the period 1866–1902 that includes connections that have not appeared in the standard histories of this problem. The author focuses on who may have known a particular solution and when he knew it. (See the article in the same journal by Gerald S. Goodman, **30** (3) (2008), 43–49. *See* #36.3.18.) (FA) #38.1.107

Stephenson, Craig. George Darwin's lectures on Hill's lunar theory. *British Society for the History of Mathematics Bulletin* **24** (3) (2009), 159–171. Describes the content and context of Darwin's lectures, given in the 1890s at Cambridge. The lectures were intended to make G.W. Hill's methods of calculating the Moon's orbital motion more accessible to students of astronomy. (PWH) #38.1.108

Tanács, János. Grasping the conceptual difference between János Bolyai and Lobachevskii's notions of non-Euclidean parallelism. *Archive for History of Exact Sciences* **63** (5) (2009), 537–552. The author provides an alternative to the standard interpretation of Bolyai's understanding of non-Euclidean parallelism and his use of the term "parallela" in his *Appendix*. He then uses Bolyai's *Commentary* to examine the differences between the notions of parallelism by Bolyai and Lobachevskiĭ. (DJM) # 38.1.109

Thanailaki, Polly. Breaking social barriers: Florentia Fountoukli (1869–1915). *British Society for the History of Mathematics Bulletin* **25** (1) (2010), 32–38. Considers the educa-

tion and career of the first Greek woman to attend lectures at Athens University's mathematics department. (PWH) #38.1.110

Thomas, Federico. A short account on Leonardo Torres' endless spindle. *Mechanism and Machine Theory* **43** (8) (2008), 1055–1063. This article discusses Leonardo Torres' analog machine for computing the roots of algebraic equations and provides a detailed description of his endless spindle. (LM) #38.1.111

Valente, K.G. Giving wings to logic: Mary Everest Boole's propagation and fulfillment of a legacy. *The British Journal for the History of Science* **43** (1) (2010), 49–74. The article is concerned with Mary Everest Boole, aiming to complete and correct the picture of her by arguing that she was not only concerned with her husband's legacy but also with education and the propagation of scientific ideas to various audiences. Mrs. Boole also campaigned for educational reform, with less emphasis on rote memorization and more on constructive imagination. See the review by Øystein Linnebo in *Zentralblatt MATH* 1189.01018. (GSS) #38.1.112

See also #38.1.77; #38.1.78; #38.1.124; and #38.1.152.

20th century

van Atten, Mark; and Kennedy, Juliette. "Gödel's modernism: On set-theoretic incompleteness," revisited, in Lindström, Sten et al., eds., *Logicism, Intuitionism, and Formalism: What has Become of Them?* (*Synthese Library* **341**) (Dordrecht: Springer, 2009), pp. 303–355. Analyzes the evolution of Gödel's thinking about whether absolutely undecidable propositions exist in set theory, and related developments subsequent to Gödel's work. See the review by J.M. Plotkin in *Mathematical Reviews* 2509664 (**2010i**:03054). (KP) #38.1.113

Audin, Michèle. *Une histoire de Jacques Feldbau* [*The Story of Jacques Feldbau*] (*La Série T.*), Paris: Société Mathématique de France, 2009, 132 pp. This book provides an account of the life and scientific works of the French mathematician Jacques Feldbau (1914–1945). See the review by V.N. Saliĭ in *Zentralblatt MATH* 1190.01014. (LM) # 38.1.114

Audin, Michèle. Publier sous l'Occupation. I. Autour du cas de Jacques Feldbau et de l'Académie des sciences [Publishing during the German Occupation of France. I. The case of Jacques Feldbau and the Académie des Sciences]. *Revue d'Histoire des Mathématiques* **15** (1) (2009), 7–57. This articles discusses mathematical publishing during the German Occupation of France (1940–1944), focusing on the case of Jacques Feldbau. (LM) #38.1.115

Baas, Nils A.; and Skau, Christian F. Interview with Atle Selberg: Part 1 – Mathematical childhood [in Norwegian]. *Normat* **56** (1) (2008), 5–23. This is the first part of four interviews with Atle Selberg (1917–2007); it covers his childhood and youth up to his departure for the US after the war. (LM) #38.1.116

Baas, Nils A.; and Skau, Christian F. Interview with Atle Selberg: Part 2 – Sieve methods, prime number theorem and Erdös [in Norwegian]. *Normat* **56** (2) (2008), 49–67. This is part two of four interviews with Atle Selberg (1917–2007). It discusses his mathematics after the completion of his doctorate, how he proved the prime number theorem, and his connection to Erdös. (LM) #38.1.117

Baas, Nils A.; and Skau, Christian F. Interview with Atle Selberg: Part 3 – The Riemann hypothesis and the trace formula [in Norwegian]. *Normat* **56** (3) (2008), 97–110. This is the third part of the interview with Selberg. It mostly deals with his contribution to the Riemann hypothesis. (LM) #38.1.118

Baas, Nils A.; and Skau, Christian F. Interview with Atle Selberg: Part 4 – IAS and obiter dicta [in Norwegian]. *Normat* **56** (4) (2008), 145–165. This is the final part of the interview with Selberg in which he reminiscences about his colleagues at the Institute of Advanced Study. (LM) #38.1.119

Badino, Massimiliano. The odd couple: Boltzmann, Planck and the application of statistics to physics (1900–1913). *Annalen der Physik* **18** (2–3) (2009), 81–101. The author discusses Planck's derivation of his distribution law after he reflected on Boltzmann's combinatorial arguments. The author also compares Planck and Boltzmann with respect to the role of statistical arguments in physics. See the review by Lawrence Sklar in *Mathematical Reviews* 2495927 (**2010i**:82001). (AAH) #38.1.120

Baierl, Rudolf. Sierpińskis Arbeit über Cantors homöomere Treppenfunktion oder das Verbergen der Ursprünge mathematischer Konstruktionen [Sierpiński's work on Cantor's homeomeric step function or the hiding of the origins of mathematical constructions], in *Helmut Pachale in memoriam* (*Forum der Berliner Mathematischen Gesellschaft* **6**) (Berlin: Berliner Mathematische Gesellschaft, 2008), pp. 27–53. The author considers an example of an analytical (functional) definition of Cantor's step function given by Sierpiński. See the review by Roman Duda in *Zentralblatt MATH* 1191.01016. (LM) #38.1.121

Beham, Bernhard; and Sigmund, Karl. A short tale of two cities: Otto Schreier and the Hamburg–Vienna connection. *Internationale Mathematische Nachrichten* **210** (2009), 1–18. Discusses the short life of Otto Schreier (1901–1929), where the only cities of importance were Vienna and Hamburg, by looking at his close connections to now famous scientific figures. See the review by Rüdiger Thiele in *Zentralblatt MATH* 1189.01036. (ML) #38.1.122

Bokut, Leonid A. *See* #38.1.148.

Bremner, Murray. *See* #38.1.148.

Bru, Bernard; and Eid, Salah. Jessen's theorem and Lévy's lemma: A correspondence. *Journal Électronique d'Histoire des Probabilités et de la Statistique/Electronic Journal for History of Probability and Statistics* **5** (1) (2009), 110 pp. The similar results found separately by Jessen and by Lévy in 1934 are considered the earliest general formulations of the martingale convergence theorem. This paper discusses the work of each researcher and presents English translations of the correspondence between them, described as "a kind of dialogue of the deaf between two mathematicians who conceived of mathematics in entirely different ways," as well as related correspondence. See the review by William J. Adams in *Mathematical Reviews* 2520663 (**2010h**:60133). (KP) #38.1.123

Bullynck, Maarten. Reading Gauss in the computer age: On the US reception of Gauss's number theoretical work (1938–1989). *Archive for History of Exact Sciences* **63** (5) (2009), 553–580. This article explores the continuation of Gauss' research into number theory by Derrick Henry Lehmer and Daniel Shanks using the then newly-available computational power of digital computers. (DJM) #38.1.124

Cartier, Pierre; and Illusie, Luc, eds. A tribute to Henri Cartan. *Notices of the American Mathematical Society* **57** (8) (2010), 946–950. A brief sketch of the life and work of Henri Cartan (1904–2008) by Jean-Pierre Serre with personal reflections from Michael Atiyah. (DJM) #38.1.125

Cartier, Pierre; and Illusie, Luc, eds. Cartan and complex analytic geometry. *Notices of the American Mathematical Society* **57** (8) (2010), 952–960. Recollections, tributes and analysis of Cartan, focussing on his work in complex analytic geometry with contributions from Jean-Pierre Demailly, Shoshichi Kobayashi, Raghavan Narasimhan, and Yum-Tong Siu. (DJM) #38.1.126

Cartier, Pierre; and Illusie, Luc, eds. Cartan as a teacher. *Notices of the American Mathematical Society* **57** (8) (2010), 961–971. Articles concerning Cartan's roles as teacher and mentor over the decades, with contributions from Pierre Cartier, Jacques Dixmier, Adrien Douady, Christian Houzel, Jean-Pierre Kahane, and Max Karoubi. (DJM) #38.1.127

Cartier, Pierre; and Illusie, Luc, eds. Cartan, Europe, and human rights. *Notices of the American Mathematical Society* **57** (8) (2010), 972–975. These comments focus on Cartan's advocacy of human rights, the freedom to travel and communicate of scientists, and European integration. Contributions from Jean-Pierre Bourguignon, Reinhold Remmert, and Friedrich Hirzebruch. (DJM) #38.1.128

van Dalen, Dirk. *See* #38.1.132.

Darrigol, Olivier. A simplified genesis of quantum mechanics. *Studies in History and Philosophy of Science. Part B. Studies in History and Philosophy of Modern Physics* **40** (2) (2009), 151–166. The author aims to simplify the history of quantum mechanics for physicists and philosophers, but he preserves technical detail. See the review by Arne Schirrmacher in *Mathematical Reviews* 2533176 (**2010i**:81002). (AAH) #38.1.129

Dehling, Herold. André Dabrowski's work on limit theorems and weak dependence. *The Canadian Journal of Statistics* **37** (3) (2009), 307–326. A survey of the work in limit theorems and weak dependence in probability theory of André Dabrowski. (DJM) #38.1.130

Eid, Salah. *See* #38.1.123.

Fienberg, Stephen E. *See* #38.1.145.

Franks, Curtis. *The Autonomy of Mathematical Knowledge. Hilbert's Program Revisited*, Cambridge: Cambridge University Press, 2009. xiv + 213 pp. Rejecting the common perception that Hilbert's program for systematizing mathematical foundations was primarily a failure due to technical obstacles such as the incompleteness theorem, the author argues that the program's true significance lies in its insight "that mathematical techniques and practices do not need grounding in any philosophical principles." (KP) #38.1.131

Freudenthal, Hans. *Selecta*. Edited by Tonny A. Springer and Dirk van Dalen. Zürich: European Mathematical Society, 2009, viii + 653 pp. A selection of 41 mathematical papers of the more than 700 publications of Hans Freudenthal (1905–1990), with brief editorial comments and biography. A complete bibliography is included. See the review by Albert C. Lewis in *Zentralblatt MATH* 1186.01026. (DJM) #38.1.132

Gandon, Sébastien. Toward a topic-specific logicism? Russell's theory of geometry in *The principles of mathematics. Philosophia Mathematica. Series III* **17** (1) (2009), 35–72. Bertrand Russell's philosophy of mathematics as ultimately reducible to logic did not conform well to his purely synthetic projective approach to geometry. This paper asks, "[H]ow is it possible to reconcile Russell's global reductionist standpoint with his local defence of the specificities of geometry?" (KP) #38.1.133

von zur Gathen, Joachim. Zimmermann telegram: The original draft. *Cryptologia* **31** (1) (2007), 2–37. Provides reproduction and analysis on the Zimmerman telegram of 1917. See the review by Pietro De Poi in *Zentralblatt MATH* 1189.01020. (ML) #38.1.134

Gessen, Masha. *Perfect Rigor. A Genius and the Mathematical Breakthrough of the Century*, Boston, MA: Houghton Mifflin Harcourt, 2009, xi + 242 pp. This book provides an account of Grigori Perelman's life and his solution of the Poincaré conjecture. It also gives a history of the conjecture and an account of how its proof evolved and became accepted. See the review by Albert C. Lewis in *Zentralblatt MATH* 1191.01044. (LM) #38.1.135

Grattan-Guiness, Ivor. Bertrand Russell (1872–1970), man of dissent. *Notes and Records of the Royal Society of London* **63** (4) (2009), 365–379. A biography of Russell, containing items both mathematical and political. See the review by Roman Duda in *Zentralblatt MATH* 1186.01010. (GSS) #38.1.136

Guerra, Francesco; and Robotti, Nadia. *Ettore Majorana: Aspects of His Scientific and Academic Activity* (*Centro di Ricerca Matematica Ennio De Giorgi* (*CRM*) *Series*, **6**), Pisa: Edizioni della Normale, 2008, xii + 243 pp. This book investigates aspects of the scientific and academic activity of Ettore Majorana as well as his human personality based on original documents. It includes an appendix with a complete list of his publications and his doctoral degree thesis. (LM) #38.1.137

Guerra, Francesco; and Robotti, Nadia. Ettore Majorana's forgotten publication on the Thomas–Fermi model. *Physics in Perspective* **10** (1) (2008), 56–76. This article analyzes the forgotten communication of Ettore Majorana on the Thomas–Fermi statistical model of the atom. See the review by Arne Schirrmacher in *Mathematical Reviews* 2390638 (**2010j**:81002). (LM) #38.1.138

Hartmann, Uta. *Heinrich Behnke (1898–1979). Zwischen Mathematik und deren Didaktik* [*Heinrich Behnke (1898–1979). Between Mathematics and Its Didactics*], Frankfurt am Main: Peter Lang, 2009, 352 pp. This book discusses the scientific and professional biography of Heinrich Behnke, the main results of his (and his students') mathematical work in several complex variables, and his work in mathematics education in the Weimar Republic and in the Third Reich. See the review by Reinhard Siegmund-Schultze in *Zentralblatt MATH* 1186.01011. (GSS) #38.1.139

Hoaglin, David C. *See* #38.1.145.

Hollings, Christopher. The early development of the algebraic theory of semigroups. *Archive for History of Exact Sciences* **63** (5) (2009), 497–536. The author discusses the evolution of semigroup theory out of both group and ring theory. (DJM) #38.1.140

Hollings, Christopher. Anton Kazimirovich Suschkewitsch (1889–1961). *British Society for the History of Mathematics Bulletin* **24** (3) (2009), 172–179. A brief account of the life and work of Suschkewitsch, a mathematician who spent most of his working life at

Kharkov State University. Suschkewitsch was one of the early contributors to semigroup theory. (PWH) #38.1.141

Illusie, Luc. *See* #38.1.125; #38.1.126; #38.1.127; and # 38.1.128.

Jones, Lawrence; Mills, Frederick; Sessler, Andrew; Symon, Keith; and Young, Donald. *Innovation was not Enough. A History of the Midwestern Universities Research Association (MURA)*, Hackensack, NJ: World Scientific, 2010, xi + 256 pp. This book presents a detailed historical report on the MURA project also based on archival materials. It also provides a background of the scientific work conducted at the association. See the review by Werner Kleinert in *Zentralblatt MATH* 1190.01026. (LM) #38.1.142

Kennedy, Juliette. *See* #38.1.113.

Khoai, Ha Huy. On complex analysis in Vietnam. *Acta Mathematica Vietnamica* **35** (1) (2010), 1–6. A brief survey of the development and historical context of complex analysis in Vietnam from 1947, when it was the subject of the first publication by a Vietnamese mathematician in an international journal, to current times. (KP) #38.1.143

Kotchetov, Mikhail V. *See* #38.1.148.

Latyshev, Victor. *See* #38.1.148.

Mainardi, F. *See* #38.1.146.

Mazliak, Laurent. Ten letters from Wolfgang Doeblin to Bohuslav Hostinský. *Journal Électronique d'Histoire des Probabilités et de la Statistique/Electronic Journal for History of Probability and Statistics* **3** (1) (2007), 15 pp., electronic only. Ten letters in French on probability from Wolfgang Doeblin to Bohuslav Hostinský, written between 1936 and 1938. See the review by Elliott Mendelson in *Zentralblatt MATH* 1190.01009. (DJM) #38.1.144

Mills, Frederick. *See* #38.1.142.

Mosteller, Frederick. *The Pleasures of Statistics. The Autobiography of Frederick Mosteller*. Edited by Stephen E. Fienberg, David C. Hoaglin, and Judith M. Tanur. New York, NY: Springer, 2010, 344 pp. This is an autobiography of Mosteller, describing many of the projects and events in his scientific career. A special feature of the book is its insider accounts of work on the pre-election polls of 1948, statistical aspects of the Kinsey report on sexual behavior in the human male, mathematical learning theory, authorship of the disputed Federalist papers, safety of anesthetics, and a wide-ranging examination of the Coleman report on equality of educational opportunity. See the review by Teodora-Liliana Rădulescu in *Zentralblatt MATH* 1187.01030. (GSS) #38.1.145

Robotti, Nadia. *See* #38.1.137; and #38.1.138.

Rogosin, S.; and Mainardi, F. *The Legacy of A. Y. Khintchine's Work in Probability Theory*, Cambridge: Cambridge Scientific Publishers, 2009, 280 pp. The editors provide English translations of many of the more important papers of probabilist Alexander Yakovlevich Khintchine (1894–1959) together with notes and commentary. (DJM) #38.1.146

Sarnak, Peter, coordinating editor. Remembering Paul Cohen (1934–2007). *Notices of the American Mathematical Society* **57** (7) (2010), 824–838. An appreciation of mathematician Paul Joseph Cohen, with contributions from Angus MacIntyre, John G. Thompson,

Saharon Shelah, Harold Diamond, Dennis Hejhal, Thomas C. Hales, Mihalis Kolountzakis, Gerald Alexanderson, Ilan Vardi and Charles Cohen. (DJM) #38.1.147

Sessler, Andrew. *See* #38.1.142.

Shestakov, Ivan. *See* #38.1.148.

Shirshov, A.I. *Selected works of A.I. Shirshov* (*Contemporary Mathematicians*). Translated by Murray Bremner and Mikhail V. Kotchetov. Edited by Leonid A. Bokut, Victor Latyshev, Ivan Shestakov and Efim Zelmanov. Basel: Birkhäuser, 2009. viii + 242 pp. Contains translations of almost all the published scientific writings of the Russian algebraist Anatolii Illarionovich Shirshov (1921–1981), as well as some commentaries by former students and others. See the review by Teodora-Liliana Rădulescu in *Zentralblatt MATH* 1188.01028. (KP) #38.1.148

Shomar, Towfic. Bohr as a phenomenological realist. *Journal for General Philosophy of Science* **39** (2) (2008), 321–349. Argues that the physicist Niels Bohr should be classified philosophically as "an instrumentalist on the theoretical level but a realist on the level of models," a position called by the author "phenomenological realism" (and somewhat reminiscent of the famous description by Davis and Hersh of the "typical working mathematician" as "a Platonist on weekdays and a formalist on Sundays"). (KP) #38.1.149

Siegmund-Schultze, Reinhard. Richard von Mises (1883–1953): A pioneer of applied mathematics in four countries. *European Mathematical Society Newsletter* **73** (2009), 31–34. The author discusses the role Richard von Mises played in the evolution and convolutions of international mathematics in the first part of the 20th century. (LM) #38.1.150

Sigmund, Karl. *See* #38.1.122.

Skau, Christian F. *See* #38.1.116; #38.1.117; #38.1.118; and #38.1.119.

Springer, Tonnay A. *See* #38.1.132.

Steiner, Mark. Empirical regularities in Wittgenstein's philosophy of mathematics. *Philosophia Mathematica. Series III* **17** (1) (2009), 1–34. Explores Wittgenstein's decade-long revision of some of his fundamental philosophical assumptions, arguing that "these changes are rooted in his growing belief that mathematical theorems are... 'hardened' empirical regularities," and that the increasing importance he assigned to these empirical patterns had profound implications for his later thinking. (KP) #38.1.151

Steuding, Jörn. Voronoï's contribution to modern number theory. *Šiauliai Mathematical Seminar* **2** (10) (2007), 67–106. Surveys the life and influential research of the Ukrainian mathematician Georgiy Voronoï (1868–1908), particularly his "contributions to the theory of algebraic numbers, analytic number theory, and the geometry of numbers." (KP) #38.1.152

Symon, Keith. *See* #38.1.142.

Tanur, Judith M. *See* #38.1.145.

Young, Donald. *See* #38.1.142.

Zelmanov, Efim. *See* #38.1.148.

See also #38.1.14; #38.1.77; #38.1.91; #38.1.92; #38.1.93; #38.1.98; and #38.1.115.

Reviewers

Index of authors of reviews in *Mathematical Reviews*, *Zentralblatt MATH*, and other publications that are referenced in these abstracts.